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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/049,653 | 06/12/2002 | Akihiro Toritani | 220041US0PCT | 1722 |

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EXAMINER

ASINOVSKY, OLGA NMN

ART UNIT PAPER NUMBER

1711

DATE MAILED: 01/29/2003

6

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/049,653

Applicant(s)

Toritani et al

Examiner

Olga Asinovsky

Art Unit

1711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Jun 12, 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on Jun 12, 2002 is/are a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 2 6) ☐ Other:

Art Unit: 1711

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

(A) Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jiroumaru et al U.S. Patent 4,446,309 as a single primary reference, or in view of Sugimori et al U.S. Patent 4,491,658.

Claim 1 claims a production method of polymer particles which producing graft polymer particles by contacting a coagulant which a polymer latex (A) obtained by graft polymerizing a monomer containing methylmethacrylate to a rubber-like polymer, the method having a coagulation step in which polymer latex (A) is discharged into a stirring tank from an immersed nozzle provided so that the cross-sectional surface area of the discharge portion is 40 mm² or more and the direction of discharge is facing in the same direction as the flow in the stirring tank and so that the linear velocity at the nozzle outlet is a velocity of 50-350 mm/s, and contacted with a coagulant to coagulate the graft polymer and obtain a slurry liquid, and a solidification step

Art Unit: 1711

in which the resulting slurry liquid is held at a temperature of 60-100 C to solidify the coagulated graft polymer.

Jiroumaru discloses a method for continuously coagulating a rubbery polymer latex to obtain a polymer solid, column 6, claim 1. The rubbery polymer latex can be any of the rubbery polymer latex produced in conventional emulsion polymerization methods, column 3, lines 60-68. A coagulation of a rubbery polymer latex is obtained in a stirring apparatus having at one end a nozzle for feeding a rubbery polymer latex and a nozzle for feeding a coagulant solution, whereby the two liquids are momentarily coming into contact=mixed, column 3, lines 16-18, for producing the completely coagulated slurry, examples at column 5, line 31. Reference discloses the excellent benefit in the efficiency for contact between the polymer latex and the coagulant thereby the quantity of the coagulant can be reduced, column 5, lines 1-3. After treatment operations such as solid-liquid separation, washing, dehydration and drying become easier, column 4, lines 62-68.

The difference between the present claim and Jiroumaru is the requirement in the present claim that a latex polymer is graft polymer particle containing methylmethacrylate grafted to a rubbery-like polymer. Also, reference does not disclose a solidification step to solidify the coagulated graft polymer at a temperature of 60-100 C. However, reference discloses that a method for obtaining a coagulated slurry can be applied to any rubbery polymer latex. Also, after treatment operations such as solid-liquid separation, washing, dehydration and drying step become easier.

Art Unit: 1711

It would have been obvious to one of ordinary skill in the art to use a method for coagulating a rubbery polymer latex in Jiroumaru invention wherein latex polymers are graft polymer particles containing methylmethacrylate because a method in Jiroumaru can be applied for any rubbery polymer latexes within the equivalent results for obtaining coagulated polymer slurry. Also, it would have been obvious to one of ordinary skill in the art to use a method for coagulating a rubbery polymer latex in Jiroumaru invention wherein the coagulated polymer slurry after treatment operations is solidified since the drying step would be expected to produce a solid polymer.

Sugimori discloses a method for treating emulsified latex with a coagulation solution and forming a slurry, and then solidify the obtained slurry by elevation of temperature at 30 to 90 C., and said solid is washed and then dried to obtain a particulate form, column 3, lines 55-59 and column 5, line 65. The emulsified latex can be a graft copolymer consisting of rubber-like polymer grafted with ethylenic monomers such as methylmethacrylate, column 6, lines 5-8, 23 and 30-35.

It would have been obvious to one of ordinary skill in the art to employ a latex such as a graft copolymer containing a methylmethacrylate grafted onto a rubber-like polymer as discloses in Sugimori and to use a method for producing coagulated slurry in Jiroumaru since any polymer latex works within the same expectation of adequate results in Jiroumaru' invention. Also, it would have been obvious to one of ordinary skill in the art to apply a step of solidifying the coagulated slurry at a temperature of 30 to 90 C in Sugimori for treatment operations processes in

Art Unit: 1711

Jiroumaru since a solidification step of obtained coagulated slurry would be expected in Jiroumaru.

2.(B) Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 60127312 in view of Yasui et al U.S.Patent 4,792,490.

JP discloses a method for obtaining thermoplastic resin powder by contacting a latex of thermoplastic resin through nozzle having capillaries into coagulating solution, therein a said thermoplastic resin comprising butadiene, styrene and methylmethacrylate, abstract.

Yasui discloses a method for obtaining coagulated grains from latex particles wherein latex particles are graft copolymer prepared by graft copolymerization of a mixture of styrene, acrylonitrile and methylmethacrylate onto butadiene polymer, column 16, lines 57-59. The latex particles are coagulated, then coagulated grains were dried for about 2 hours at 60 C, column 17, line 13. It would have been obvious to one of ordinary skill in the art that the obtained powder in JP'312 can be solidified at the temperature of at least 60 C as discloses in Yasui since both references disclose the analogous polymer latex.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Olga Asinovsky whose telephone number is (703) 308-0041. The examiner can normally be reached on Monday to Friday from 9am to 5:30pm.

Art Unit: 1711


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck, can be reached on (703) 308-2462. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-7718 and (703) 872-9311 after final.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

O.A.

O.A.

January 24, 2003


James J. Seidleck
Supervisory Patent Examiner
Technology Center 1700